MATERIA MEDICA.

J. CARSON.

Notes on Topics connected
with Materia Medica & Therapeutics.

Cauterization of the uterus
Application & dangers —

Cauterization cannot be rationally employed to scirrhus or encephaloid tumour, even when confined to the neck of the uterus, but when the tumour is little voluminous, and when it is decided to remove by incision in the first place & burn off the remainder. Cauterization has also been more particularly proposed for ulcerations of a cancerous nature, either primitive or secondary. To this form of cancer cauterization is most applicable & if we should speak here in detail, it would be only to treat of the whole method of proceeding in such conditions. In fact ~~[illegible]~~ Syphilis of little thickness can in this way be destroyed layer by layer, but independent of the dangers which are immediate of these repeated cauterizations, besides the acute inflammation of the womb or peritoneum to which patients are exposed; it is known with what rapidity carcinomas improperly tormented by caustics, increase and become aggravated. It is not only at the points with which the irritating substance is brought in contact, but in the remainder of the organ, in the neighbouring organs, that this acceleration is observed in the progress of the affection.

Thus less than excision, is cauterization proper when we suspect that the disease has ex-

tended to the body of the uterus, or that the ovaries are affected or still further that the lymphatic ganglions of the pelvis are engorged or degenerated. Mr. Lacy & Lespinasse have obtained, it may be said, successfully incisions in doubtless, even in despite of this complication which was not probable but apparent.

Cauterization would have still greater convenience in certain proceedings, if great care were not taken to limit the caustic action upon the vagina, the thickness of which is, as is well known ~~little~~ just considerable. The sides of the speculum does not sufficiently protect the adjacent parts; it is necessary that the dossels of lint, employed to cleanse the os tincae, should also be used to absorb the fluids that run from the cauterized surface, & should be permitted to remain so long as the caustic has not finished acting, and prevent it extending with devouring activity beyond the diseased point; it is necessary that the remains of the caustic should be removed by injections & that baths should be employed to dissipate the effects of too great irritation.*

These precautions are absolutely necessary

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* A sponge with soapsuds

if liquid substances are used with a brush as nitrate of mercury, butter of antimony! & it is the same if the substance although solid is very soluble as caustic potassa. Case communicated to him, where the vagino rectal partition was destroyed, so as to extract the distress incident to such a state of things, upon the primary disease; the patient perished, but had she lived & gotten well of the cancer, must have laboured under the frightful infirmity produced. Nitrate of silver has less inconvenience but it is less potent.

Dugas & Bivins.

Urine —

Properties arranged according to the following relations. Sensible. Mechanical & Chemical.

Berzelius Analysis of Urine

Water		933.00
	Urea	30.10
	Lithic acid	1.00
	Free Lactic acid? Lactate of Ammonia and animal matters in ~~solution~~ solution from the above osmazome soluble in alcohol coagulates soluble in water	17.14
	Vesical Mucus	.32
Sulphate of Potassa		3.71
Soda		3.16
Phosphate of soda		2.94
" Ammonia		1.65
Muriate of Soda		4.45
" Ammonia		1.50
Earthy Phosphates with	Trace of fluate of lime	1.00
Silex		.003
		1000.00

Characters of Healthy urine — recent & warm

1 — light amber colour. transparent

2 — odour peculiar like violets.

3 — taste saline bitter

4 — Sp. gravity — 1.010. to 1.015 — or 1.012 to 1.017 — Vendler. This is changed by the increase or diminution of the water & the saline constituents. sweating in warm weather increases the density; large quantities of fluids diminishes.

5 — Temperature 92° F. varies from 112 to 120 F.

6 — Quantity — Oij to Oiij in 24 hours — varied by food drinks &c

7 — Reddens litmus paper

8 — Aromatic odour becomes urinous. then sour. then fetid.

9 — Becomes cloudy, opaque & forms deposits.

Constituents of Urine & Their Chemical Relations

Water

Demonstrable by evaporation & inspissation of fluid.

Urea

Obtained by Prouts method. Evaporate fresh urine to the consistence of a syrup. Cool. Add gradually concentrated nitric acid into the whole as a dark coloured crystalized mass. Wash with cold distilled water & drain. Neutralize with Carb of soda or potassa in solution. Concentrate by evaporation & allow the nitric to crystalize. Mix the residual solution (impure urea) with a sufficiency of purified ancined charcoal to form a paste. After

a few hours, treat with distilled water to dissolve out the urea, filter the solution & evaporate to dryness at a gentle heat. Dissolve out the urea from the dry mass with boiling alcohol, which will leave nitre & saline impurities. Pure urea may be obtained from the alcoholic solution by evaporation & crystallization. If colored redissolve in alcohol & crystallize.

Form a four sided prism.

Colour transparent with a pearly lustre.

Taste cooling like nitre.

Smell faint & peculiar not urinous.

Property not acid or alkaline.

Deliquescent in damp weather not decomposed

Heat melts & partly decomposes, partly sublimed.

Specific gravity 1.350

Dissolved in its own weight of water at 60° not changed.
if impure decomposed & forms carb. of ammonia.
by boiling water any quantity dissolved. not changed.
Alcohol takes up 20 pr ct. Boiling more than its own weight, separates on cooling.
Not soluble in ether & essent. oils. they become opaque.

Decomposed by the pure fixed alkalies when heat is applied & water present. the result is carbonate of ammonia

Unites with metallic oxides, combination with silver grayish, a detonating compound.

It does not of itself decompose a metallic salt, the aid of double affinity is necessary.

It combines with Nitric acid & forms a crystallized compound, sparingly soluble in water.
A similar one is formed by oxalic acid.
Reagents Nitric acid forms crystals, bright & pearly like boracic acid. Test in urine.
Oxalic acid — do . do
To render this more complete evaporate urine.
Caustic alkalies, liberate ammonia. as Liquor potassae.
Urea produces in the crystals of common salt the octahedral form & of Muriate of Ammonia the cubic.*
Lithic acid (Uric)
Separated by any other acid (Muriatic or acetic.)
Reddens Litmus
To obtain it take a lithic calculus, act upon it with caustic potassa & add Muriatic acid. The potassa combines ~~combines~~ it by forming a soluble ~~soluble~~ Lithate of potassa, from which it is separated by Muriatic acid.
It forms the white part of the excrement of birds, in combination with ammonia. Guano is an example. The solid urine of the Boa constrictor is of the same composition. The same process may be adopted as above (Graham 577)
Properties of Uric Acid
Crystallizes in thin scales, silky lustre & brilliant white.
Inodorous & insipid
Loses nothing at 212°.
Soluble in 10.000 parts of water at 60° (Henry - 1820)
A little more soluble in hot water.
Soluble in the fixed Alkalies & precipitable by any acid, even carbonic.

* Urea is composed thus $At_2 C_2 H_4 O_2$ resolveable into $H_2 O$ & $C_2 O$ (cyanic acid) & $At H_3$ (ammonia) It is therefore a cyanate of Ammonia. In fact it has been formed artificially by Wöhler from the two.
Graham says it is in the form of lactate in urine.
In the Elephant & cow, Cap & Henry say with Hippuric acid.
See process without Alcohol in Grahams Chemistry.

By acting on uric acid with Nitric, Erythric ($C_8 H_8 O_8$) Bicyanate is formed. On adding to this in boiling-water Ammonia, purpurate of ammonia will subside, in crystals. Treated with potassa & sulphuric acid, pure Purpuric acid is afforded.
The lithic acid is converted into erythric acid by nitric, & the erythric into purpuric by ammonia.
Mode in which Lithic acid exists.
Berzelius says in a free state. His explanation is that the stronger acids will saturate themselves with the alkalies existing in the urine at the expense of the weaker which must be liberated. Therefore if there be not sufficient alkaline matter to saturate all the acids, the weakest will remain uncombined.
Prout objects to this opinion
1st. On account of Solubility. Berzelius states that but one part of lithic acid exists in 1000 of urine. & Henry says it requires 1720 parts to render it soluble. Prout 10,000.
2 Any acid throws it down, this acid then must combine with something retaining it in solution.

3 There is no instance known in which lithic acid is secreted in a free state, birds, serpents secrete it in combination with ammonia. Gouty subjects with soda. If the human kidney secretes free lithic acid it is an exception to known law.

4 – Lithate of Ammonia is frequently secreted in large quantity.

Prout from these conclusions was induced to institute experiment & was convinced that "no uncombined acid exists at all"

Lithic acid exists as Lithate of Ammonia. It reddens litmus paper, and as Dr Prout has shown can exist without decomposition with super phosphate of Ammonia. It also reddens litmus paper. The latter exists in urine.

If urine be slowly evaporated lithate of Ammonia is deposited as an amorphous ~~crystals~~ sediment, lithic acid in crystals, proved by evaporating urine and air pump, with sulphuric acid.

Physiologists have differed upon the question of the existence of free or combined lithic acid. It has been urged in certain conditions that the urine deposits more lithic acid than boiling water is capable of dissolving (in fever for instance. But it should be considered that in such cases the acid is in combination with ammonia & lithate of Ammonia is soluble at the ordinary temperature of the ~~atmosphere~~ urine 92°F. but insoluble at the temperature of the atmosphere & therefore deposited as the

urine cools. If the urine be heated to the same temperature 91° the deposited sediment is redissolved. It is amorphous when thus deposited.

Lithic acid has been examined by Liebig. The have he regards as urile composed of Carbon 2 at. Carbon in oxide 4 atoms, or $2(C + C_2) + 4(C\,O)$

2 Ur + 1 urea form uric acid or $2\overbrace{(C + C_2)}^{\text{urile}} + 4(C\,O) + \overbrace{C_2\,C_2\,H_4\,O_2}^{\text{urea}}$

$= C_{10}\,N_4\,O_6\,H_4$ = the symbol for uric acid.

Lactic Acid exists in urine

Best obtained from sour whey. by evaporating the whey to 1/8. filter. add lime water & an earthy precipitate is obtained. It is again filtered and on cautiously adding a solution of oxalic acid the lime is precipitated, and the lactic now free remains in solution. This solution is to be evaporated to the consistence of honey, and then treated with alcohol; the lactic acid passes through the filter dissolved in the alcohol, while the sugar and other principles remain behind. To the filtered portion a little water is to be added & then the whole distilled, the alcohol passing over & the lactic acid being left in the water.

Colour brownish yellow

Uncrystallizable.

Attracts moisture from air.

Forms soluble salts.

It has been regarded as a modified acetic acid. All its salts being soluble, it is of little moment in research.

Sulphuric acid

Mode of obtaining by adding a solution of nitrate of baryta with a considerable excess of nitric acid, a precipitate falls, this is the sulphate. Filter and collect, fuse with the blow pipe on charcoal, when the sulphuric acid is reduced to sulphur & the baryta to barium in combination. On treating this with a diluted acid as the muriatic, sulphuretted hydrogen is evolved.

Phosphoric acid.

Mode of obtaining, by several processes.

1 – If to wine be added a little potassa, the alkali will neutralize the excess of phosphoric acid, the alkali will neutralize the excess of phosphoric acid, which holds the phosphate of lime in solution. This precipitate collected & heated before the blow pipe, when it becomes black, then white & resists further action. It readily dissolves in hydrochloric acid & is precipitated again by any alkali which will neutralize the free acid.

2. Add to wine some soluble salt of lead (nitrate or acetate) phosphate of lead precipitates, wash the precipitate in a solution of carbonate of potass. or Sod. then with diluted acetic acid & lastly with boiling distilled water. The precipitate thus purified is suspended in distilled water & a current of sulph hyd. passed through until a black matter ceases to be disengaged. The solution containing free phosphoric

ric acid is to be filtered to separate the sulphuret of lead & then boiled to expel the excess of sulphuretted hydrogen. The acid alone solution of phosphoric acid is ~~next~~ neutralized by carb potas. or soda. On adding nitrate of silver, a yellow precipitate is formed, characteristic of phosphoric acid (except arsenate of silver which can easily be distinguished by sublimation in a tube.).
Phosphoric acid is in combination with the alkalies as soda & ammonia, but there is also a portion of phosphates of lime & even magnesia.
Phosphate of lime (neutral phosphate) is insoluble unless in some strong acid as sulric or muriatic or excess of phosphoric acid. Therefore the phosphate of lime must exist as a super phosphate, a salt capable of reddening litmus.
Phosphate of lime is soluble in a large proportion of ammoniacal salts, more especially hydrochlorate of Ammonia, but this latter is too trifling to produce any such effect & even this the case we should not have the precipitate of phosphate of lime by potassa the alkali acting solely by neutralizing the excess of phosphoric acid, and thus liberating the phosphate from the excess of phosphoric acid.

Hydrochloric acid

This acid is readily shown by adding to urine, the nitrate or acetate of silver. a chloride of silver is thrown down. It is soluble in ammonia. from which it is again precipitated by nitric or acetic acid &

the precipitate is not soluble in excess of nitric acid. Becomes darker by exposure. When heated fuses, & on cooling, becomes a soft semitranslucent mass "Luna cornea". Muriatic acid exists in combination with ammonia & soda. Rationale?

Fluoride of Calcium Fluate of Lime

Mode of obtaining. Take the solid matter obtained from urine & subject it to concentrated sulphuric acid. If fluoride of calcium be present, the water of the sulphuric acid will be resolved into its constituents, the oxygen unites with the calcium to form lime, which with sulph. forms sulphate of lime. The liberated fluorine unites with the hydrogen & forms Hydrofluoric acid, which escapes, which will corrode glass.

Ammonia

Mostly combined with phosphoric acid.
Sometimes combined with lithic acid, or cyanic.
In the last case the Carbonate of Ammonia seems to be derived from the decomposition of the Urea, by mucous & fixed alkali.
Ammonia is disengaged by saturating the acids with which it is combined by means of potassa or ~~fixed~~ quick lime. The odour when heated will indicate its presence, or it may be shown by litmus reddened or turmeric paper.
The deposit from urine also frequently contains

ammonia with phosphoric acid & magnesia. If this precipitate be heated with caustic potassa the ammonia is disengaged & rendered sensible by the tests.

Potassa

Both potassa & soda exist in urine in combination with sulphuric acid, but there is difficulty of demonstrating them individually.

Potassa is precipitated by tartaric acid in excess resulting in the formation of bitartrate of potassa.

A spirituous solution of chloride of platinum throws down a bright yellow precipitate consisting of chloride of platinum & potassa.

Cinchona — Notes by —

1632. Countess Cinchon sent the remedy to Spain.

Sir George Baker wrote a most interesting memoir which was read before the College of Physicians (London) in 1785.

1643 — John de Lugo, made Cardinal introduced the bark into Italy. — Lady Morgan says of Italy, "in its surrounding deserts everything depicts the death of nature." & Dr James Johnson "Italy is the very home of Malaria".

Pope Innocent the tenth.
Directed his chief physician to enquire into the accuracy of the statements with respect to properties of bark. The report was favourable. At this time the Father Provincial of the Jesuits arrived at Rome from Peru, & brought with him a large quantity. A convocation of the Jesuits happened to be at that time assembled among whom casket of bark were distributed for the purpose of disseminating

through their respective countries".
The Mode, the dose, & the time of administration were laid down in the Schedula Romana, printed by order of the Pope.

Counter book called "Pulvis Febrifugus, Vibis Amuscanis Ventilatus" by Johannes Jacob Chifletio, Equite, Regio Architriclinatorum Comite et Archiducali Medico Primario." 1653.

"This author was the physician in attendance upon Leopold governor of the Netherlands; he gave the bark in accordance with the directions of the Schedula Romana & failed, the disease was doubtful partan. He denounced the remedy & declared that any good had been produced either at Madrid, at Vienna, at Rome, Naples or Florence. Congratulates as if he had seen the world of a monster. Book reprinted at Paris

Fabre was induced by Cardinal de Lugo to reply, he was a Jesuit (French) he wrote under the name of Antimus Conyngius.

This called out the opinion of Harvey's discovery. Plempius - under the name Adrippus Protimus. he was Prof Phys at Louvain. Sebastian Badus has accused this author of having been accessory to the falsification of some letters from Gottiers the Kings physician & applies the epithets "Mendacius, Supposititias, Satem apocryphas to the correspondence upon the testimony of some cases.

The "Anastasis Cortices Peruviani" contains some extracts of the letter of Don Joseph Villerbel which are interesting and likewise one from the Cardinal de Lugo from which we learn that another source of opposition arose in the dearness of the price which lead to its adulteration. as was the case with other previous medicines.

Leucorrhœa

M. Emery remarks that as this is a very common affection it ought to be well known. This is not however the case.

It depends upon a variety of causes, the most common, the excitation previous & menstruation, vaginal & uterine catarrhs dependent on inflammation, displacements & the presence of foreign bodies.

"Among the causes which provoke abundant & persisting discharge, it is necessary to point out the inflammatory swelling of the womb, which occurs principally to women who are copiously regular. The discharge occurs towards the middle of the interval which is between the periods; it is remarkable from the escape of an almost transparent serosity, sometimes a little coloured by blood, thrown out by a strong contraction of the uterus & sufficiently abundant in some cases to cause females to wash."

When the uterus is examined, it is found to be voluminous, weighty, the lips & neck warm, lightly tuméfied. The motions communicated to the organ are painful; the speculum teaches nothing, for it is rare that the mucous membrane of the neck participates in the diseased condition, two or three times I have found a little redness upon the lips, but never ulceration"

According to Dr Emery this disease differs from others in the treatment it demands. It ought to be antiphlogistic, leeches & arms, baths, injections cold, diet frugal.

The syphilitic infection by inflammation of the vagina gives rise to leucorrhœa.

"But the disease of which I am about to speak, is certainly the most frequent cause of the profuse & rebellious discharges which harrass females. It consists of a peculiar affection of the neck, which has often been confounded with uterine cancer & to which a number of times has been treated with great energy.

During the fifteen years that Mr Emmet has devoted himself to diseases of the uterus, it frequently presented itself to his observation & for the last four years, he has exhibited it to a great number of physicians & students at the St Louis. The following are the Symptoms.

"Lips of the uterus of a rose colour more or less deep, presenting ulcerations which occupy a part of the lips or cover them entirely, according to the duration of the disease; the red coloration vividly contrasts with the whitish gray, which colours the surrounding parts. generally the diseased points are covered with small red vegetations which by the least touch are made to bleed. I have observed six or seven times that the lips were divided by three wounds, the fleshy eminences are sometimes two or three lines in relief, & have between them fissures which must not be confounded with the preceding alteration. The disease can be restricted to a simple redness; then the epithelium is not removed & always in this case, the disease is at its commencement & upon looking attentively, there will be perceived small granulations, which roughen it."

"When this lesion is recent, it affects but a small portion of one or the other lip of the neck, but when it has continued many months or many years, then the two lips are not only ~~[illegible]~~ involved, but their ~~substance~~ internal surface is eaten into, & the disease is extended to the cavity of the womb. This lesion must not be confounded with a syphilitic one. Often in fact the neck of the uterus is the seat of syphilitic vegetations, but they present a more or less decided resistance; they are not surrounded with intense redness, on the contrary the points upon which they are planted preserve their natural colour; & they may be touched without being made to bleed."

The parts which are the seat of the ulcerations, in the larger number of cases present an augmentation of volume. Sometimes indeed the ~~interior~~ anterior lip is hypertrophied, at others the posterior; the swelling can also involve the whole circumference of the neck, this condition especially occurs in women who have not had children. The most frequently, hypertrophy exists upon the anterior lip, when both are in this condition a space is left between them capable of containing the first phalanx of the index finger. It is then rare that the affection does not extend into the cavity of the uterus. The neck sometimes takes an enormous volume & the sore which covers its whole surface, is at least two inches to two & a half in diameter. A remarkable circumstance, is the aspect which the part presents near the disease, nothing is exhibited in it announcing

dangerous proximity, it is in the most natural condition; there are even seen healthy portions interposed between those which are diseased & which contrast in a marked way with their pale appearance alongside the intense red of the others. I have often seen the ulcerations covered with a sticky secretion, of a yellowish gray aspect, and presenting all the appearance of a wound attacked with hospital gangrene".

This disease differs from syphilitic & cancerous ulceration. The affection is almost always attended with prolapsus uteri, retroversion &c. It is then not easy to bring the neck into the axis of the speculum. If the uterus be not greatly enlarged, it can be easily enough displaced or moved.

It is not before being worn out by the symptoms which accompany this disease, that females apply for relief. When they present themselves for examination, they have a discharge which dates at least six months back, ten perhaps or further, at first white & little abundant. It has successively changed in colour & passed from white to yellow & to green & sometimes has been mixed with a little blood. Its odour has changed in character; it is more penetrating but never fetid like the ichor of cancer. Finally it terminates by becoming so abundant, that it forces them to protect themselves as in menstruation. The pain in the loins which in the commencement was trivial, have also followed the same phases in their

increase & have become permanent, pains are developed in the groin & are extended to the anterior surface of the thighs, there is observed also an other pain which appears to ascend from the pubis to the umbilicus. The locomotive capability terminates by becoming difficult & the patient, to whom the conjugal act is painful, undergoes when she sits down suddenly a sense of pain in parts where previously there was one of weight.
The general health which in the first instance had been but slightly altered, ~~was~~ not long in suffering violent attacks, digestion becomes slow & painful, there ~~was~~ are frequent nagging sensations of the stomach & the tongue which is red and pointed at the extremity, is also covered with a yellowish white layer; the appetite is lost & at times bizarre & capricious. To a persistent constipation from time to time succeeds a passing looseness." It is not rare to see this affection treated by sanguine evacuation, repeated to the great detriment of the patient, who are much debilitated by this inconsiderate medication. It is necessary to say that treatment by evacuants or tonics taken internally does not succeed any better - that the local treatment is the only one attended with success. As the mind is in case, the nights are disturbed - it is not rare to meet with hallucinations & the desire to commit suicide. Although for the most part this state is exempt from fever, there comes on profound emaciation. Women when they arrive at this point regard their death as certain, they then apply for advice & easily con

sent to every thing proposed to cure them.
Twelve years have hardly passed by since these affections were regarded as true cancers, & consequently as incurable; thus it has happened that their treatment has been undertaken by bold men who have not shrunk from the idea of practising bloody operations, & we have seen or read of in our periodicals the description of a great number of operations practised upon the the womb, either for the removal of the neck or the entire uterus. If I have well observed & I declare I have done so with great care, such operations ought to be discontinued, if for the cancer they are useless, as the disease returns more terribly when the resection of the neck is practised. All the world knows that amputation of the uterus is disastrous. I don't speak from hear say, or from the experience of others, for I have collected six observations of similar cases in patients operated upon in different hospitals of Paris — & I have the reports of the autopsy — which has always been made by me in before my eyes. I am convinced that the most part of the success obtained by resection has been upon patients suffering from the affection first described; but if the disease is not a cancer, I aver that the operation is not necessary but it is wanton & cruel, for the affection is curable without it. Within the last twelve years I have seen a great number of women attacked with this affection & I have treated four hundred without losing a single one.

this practice & these results are not mine alone. M.M. Tilney de Chegoin, Ricord, Mullen, Denis & Scanzoni have arrived at like results & one of them says with just reason that it has operated an entire revolution in the treatment of the neck of the uterus. We have daily come to regard this disease as of little consequence when properly treated. With respect to myself I have not seen it terminate in death when ~~contracted~~ occurring alone & I have rarely had occasion to make the autopsy in women attacked with like lesions. I believe that this state of the neck is not most of ~~closely~~ of wide treatment & it rarely passes to the cancerous state. I will not terminate this article without rendering to my honourable confrere M. Lisfranc all the justice he merits. It is to him that we owe the first exact ideas upon the nature & treatment of the affections of the neck of the uterus. He first pointed out this affection. ~~Revue~~ Bulletin de la Therapeut. 9th 47—

The causes of this affection are sufficiently obscure, for they coexist most frequently with displacement & hypertrophy of the lips & it is always difficult to say if it has been the first cause of swelling & consequently of prolapsus (for I am of opinion with Lisfranc that prolapsus is due to swelling or augmentation of volume in the organ at some point) or if it be the consequence of the chronic phlegmasia which has been caused by the diseased development of one or the other lip. In nearly all the cases which have fallen under my observation, the disease dated from a labour more or less remote, which in some rare cases had been laborious.

I have observed in many women that the abuse of coition was a determinate cause; but I do not believe that syphilis can be counted among those which favour its development. If it be admitted that the ulceration never precedes the displacement, we may conceive how unusual friction can produce it by producing a perpetual irritation of the neck, but I must say that I have met with it in young women who have had no displacement & that I have seen it in young girls who have had little or no connexion with men & in these latter cases it presents absolutely the same character as that observed in other subjects.

Constipation has many times appeared not to be a stranger to its production. We may conceive in fact that that the existence of hard matter in the large intestine produces upon the neck a friction which can irritate it, especially when there is displacement. We may equally conceive that expulsory efforts, by compressing parts already irritated & still further augmenting the prolapsus increase the disease or cause it. Besides these causes there exists a general disposition which contributes also to produce it. However this may be, when it exists, it announces itself by the symptoms which I have described & certainty of its existence is determined by the speculum; the touch is as unfaithful means, as a healthy structure may seem to exist when the disease has made much progress. This I have often verified & it should be understood

Treatment. Baths for two or three days — then I apply the speculum. When the ulceration is extended, the vegetations large & sanguinolent, I touch it in all its extent with acid nitrate of mercury. This cauterization which only lasts a few seconds & is absolutely without pain in nearly all cases, being finished, I make an injection of cold water to protect the surrounding parts, withdraw the speculum & have the patient bathed. I afterwards direct the use of injections three times daily — made of a strong decoction of marsh mellow root, poppy heads & henbane. At the end of five or six days, I repeat the same operation, but more delicately & apply the caustic to the parts which are saillant and bloody. Often after four or five applications, cicatrization takes place, the saillant parts are effaced and disappear; at other times on the contrary I am obliged to repeat the cauterization eight ten or twelve times.

When there are large ulcerated surfaces — the disease is of long duration, the first cauterization is followed for some hours with pain in the kidneys, tension and pain in the hypogastrium, & sometimes a light febrile movement; a bath of many hours very often overcomes this reaction, but when prolonged more than a day, I employ a small bleeding, or 20 leeches above the pubis, which constantly is sufficient to allay it. In the great number of cases of this species which I have had to treat, I have but in 8 of them observed this result, which in no way retarded the cure. After the second or third cauterization, the pains in the loins, tubiter

ally existing began to disappear, the discharge diminished, the sleep which was troubled became better the appetite revived & it was easy to perceive that the progress was favorable. The aspect of the diseased part underwent a notable change, the vegetations after being smoothed off, by little and little disappear & leave a mere whitish colored spot cicatrization goes on from the circumference to the centre. It is sufficient then to favor the cure, to touch the parts still remaining red with a drossil of lint dipped in the solution diluted with three or four times its amount of water & to continue the employment of baths & injections. or upon some occasions the cicatrization will be favoured by dressing the part with calomel ointment. In these cases the dressing must be renewed daily, while the cauterization is only practised every eighth day.

When redness alone exists without ulceration & the epithelium is elevated by small granulations. I restrict myself with very lightly touching the diseased parts with diluted acid nitrate & caustic obtain the disappearance of the redness. I have seen in twenty cases of young women this form of affection occupy the whole os uteri, which resembled a cherry beset with tubercles. (asperites) I have

employed with much success dressings of lint, anointed with a mercurial pommade composed of half an ounce of blue ointment with an ounce of cerate.

In spite of the authority of Delmas of Montpellier, I affirm, that although we meet with ulceration of the lips of the neck in prostitutes it has not more the syphilitic character than in others. Syphilitic affections of the neck are dry excrescences, mucous tubercles (or mucous pustules) chancres which have absolutely the same aspect as those situated upon the external organs, but these are not the ulcerations of which we are speaking & it is necessary to be very careful, when the cause is uncomplicated to abstain from all antisyphilitic treatment; for its employment in these cases may be attended with unfortunate consequences. The disappearance of bloody vegetations & the cicatrization of the ulcers are almost always followed by a notable diminution in the hypertrophy of the lips of the neck, it even may happen that in consequence of this diminution & of the repose enjoined upon the patient, the uterus remounts & that prolapsus in the second degree passes to the first, and after the due, women who could scarcely walk, do so with the greatest facility. I have observed very constantly a diminution wide marked of the os tincae during the treatment, but I have not as frequently seen displacement disappear. The thing worthy of remark is that in spite of the persistence of displacement, it is extremely rare to see the disease return, which induces us to

believe that neither hypertrophy nor deviations are the absolute cause of ulceration.

I have said that the disease is sometimes seen to penetrate into the cavity of the neck. I was called by my confrère M Bertron to a case of this kind in a woman who suffered for a long time and was excessively weakened, cauterization cured her & for the last eight years she has continued well.

When the ulceration is observed between the two lips it may extend even to the cavity of the uterus. I do not fear in this case to thrust the pencil moistened with caustic between the lips & thus arrest the progress of the disease, or even inject an aqueous solution to which has been added the nitrate in the proportion of 1 to 6 water. It may be understood that the disease exists in the interior of the uterus when there comes from it a whitish or yellowish fluid more or less thick or coagulated, on the contrary when the mucosity which appears at the os tincae is transparent, we may be sure that the disease is confined to the cervix, or that a cure has been effected in the cavity.

The appearance presented by the diseased part may resemble a wound attacked by hospital gangrene, in this case the lesion is always pretty deep; several times it has happened that that

have had recourse to the nitric acid pure to go to the bottom of it. Once in a woman ~~residing~~ from the environs of St Louis, who had the ostiae divided into five parts, the interstices of which were filled with red & bloody vegetations which the least touch made bleed, I practised 12 cauterizations in the course of three months. At the end of this time she went out from my wards of the hospital St Louis perfectly cured, having entered in a state of marasmus, with a disease she had suffered from during two years. A long period passed from the time of her cure, when she presented herself to me so perfect in health that I scarcely knew her. I seized the opportunity of examining her with the speculum & saw with great satisfaction that the uterus was perfectly healthy.

There is a species of vegetation which shows itself principally on the opening of the neck, although bleeding to the touch, it is a little harder than the others. I have used the nitrate with much success in obtaining its resolution. When the local symptoms disappear, at the same time the general symptoms are resolved. Thus the pains in the loins the groins, the thighs, the discharge cease little by little. Some times the last symptom persists & owes its existence to a chronic phlegmasia of the mucous membrane of the vagina, here tonic & astringent injections, nitrate of silver or ammonia injections. Repose, a mild regimen, baths, injections are the adjuvants of the treatment, and and greatly to abridge the duration of the disease.

Much has been written upon the exquisite sensibility of the mouth of the uterus, & the pain produced by the least touch

in certain diseased conditions. I know nothing more fabulous than this. It is one of the numerous examples which go to show demonstrate by evidence, that medicine is not taught solely by books & closet meditations, but by experience.

Nothing is less sensible than the neck in the normal state as well as in the diseased, it may be cut, or cauterized without the woman complaining of the slightest pain.

We must not however abuse the knowledge of this fact to place caustic applications unseasonably upon the organ, for if the life & relation is low, this is not the case with the organic phenomena & I have seen an incautious application of the actual cautery & of butter of antimony, occasion a metro peritonitis & prompt death. It is necessary to repeat the axiom which is applicable to all things here below; In medio stat virtus.

I have had occasion to examine the womb of two females with ulcers extending into the uterine cavity. The first fell a prey to a double pneumonia engrafted upon phthisis; the cavity was red & presented evident granulations, the two lips of the neck were covered with reddish vegetations. I removed the mucous membrane & I found the tissue which it covered to be in a normal condition. The second died of enteritis with ulceration, she had not only numerous vegetations upon the lips of the uterine neck, but considerable hypertrophy of the anterior lip. I examined with

attention the tissue which was developed & I could not recognise but a dense tissue, not at all disorganized, & which was far from offering the resistance met with in fibrous tumours. In a word I convinced myself that this disease had not the gravity, which for so long a time has been attributed to it. Emery —

Bulletin Therapeutique — 14 — Vol 9 — for 1835.

Yellow Fever
From an Inaugural Dissertation
of
Dr. John Mentire
of S. Carolina —
published at Edinburgh in 1749 —

By the French called La Malada des Siam, or La Fievre Matallotte; by the Spaniards "Vomito prieto" by the English Yellow fever, or black vomiting from the symptoms.

In the Southern region of America this disease rages in the months of June July & August, when the heat of the sun is most intense & the rains most copious. In the neighbouring islands (W.I.) in other months. Those who inhabit the cities, the robust the sanguine, labourers who are exposed to the sun by day & to the air by night, the intemperate, sailors, common people, strangers, especially have it. Rarely the wealthy, the young or females

Line when prevalent.

The class of persons which is to it.

because their lives are free from labour and exposure.

An exception is the Negroes, who are exposed equally to the causes, yet have nevertheless the burning fever. Exception of Negroes

This fever does not attack all indiscriminately even when possessing the same temperament and living in the same way. It rarely attacks the acclimated. The indigenous Africans & the Negroes from the hotter regions of Africa are exempt. Europeans unaccustomed to heat & foreigners are most liable to it. Unacclimated most obnoxious

It is put an end to by cold. In the year 1745 on the 21st of September the thermometer fell to 58° F. in Charleston, when all the cases became convalescent & no death occurred in the whole town, only two or three cases occurred in the whole province. Checked by cold.

Fixed and acute pain in the forehead, sudden lassitude & debility without manifest cause, vertigo, coldness, chilliness & shivering, often cold sweats. Burning fever immediately follows these symptoms, with great anxiety, oppression, pain in the precordium, the hand being pressed to the part, also in the loins, extending to the extremities & settling in the bones. Pulse very frequent, small, hard & contracted, sometimes quick, hard, & vehement, eyes prominent, red almost inflamed, face neck Symptoms 1st stage

and chest very red, extreme heat about the vital viscera, skin sometimes very hot, but often moist with perspiration; respiration heavy & sighing. Loss of appetite, nausea & perpetual vomiting. Diarrhoea, jactitation, perinoia, if sleep not such as is refreshing finally must augment the preceding symptoms. At this stage of the disease hemorrhagies often copiously issue from the nose & ears; the tongue becomes dry parched, hard & with difficulty protruded. Urine frequently crude, pale or of a red colour, ~~but~~ get at the end of the first or beginning of the second stage I have noticed that a white white sediment subsides. The blood drawn appears dissolved, its crassamentum is broad and of little depth, & inarticulating, not as firm & compact as in the natural state; livid spots upon the edges.

Nausea &c

Hemorrhages

Urine

Blood

This first stage lasts one five or three days rarely longer. On account of the force of the disease & the temperament it causes death more rapidly in the stout sanguine & accustomed to labour than in the delicate & quiet.

2d Stage.

Now follow the symptoms of the Second Stage. Universal yellow effusion, first in the eyes, then observable in the neck & often I have observed the urine as loaded with bile as of jaundiced patients. Then the fever appears greatly to abate, the pulse becoming slower and softer, or quicker and so small that it gives the impression of

of a fine thread; the skin becomes bedewed with cold sweats; the urine & colliquative alvine dejections assume almost a saffron hue the tongue is moister & cleaner than in the first stage; the lips, tongue, gums & palate are much redder as if about to bleed. Frequently at this time the patient sleeps, but not refreshingly, although it may be gently. No fear is to be placed in appearances, for the prospect of convalescence is very often deceptive.

These symptoms of the second stage continue continue either only for a few hours, often one or two days rarely longer. Duration of 2d Stage

Now follow the series of symptoms so much to be dreaded of the Third Stage. Symptoms of 3d Stage.

Hemorrhages profuse indeed, from the mouth nose & often from the skin of the chest, neck & face, such as might break out from so many punctures of a lancet! The patient passes above & below a great quantity of a black, dissolved & gangrenous. The urine becomes black & fœtid, the pulse fluctuating, weak and tremulous & there appears to be an entire intermission to the fever. Black vomit.

Cold & colliquative sweats are poured forth, distressing hiccough, heavy and difficult respiration, convulsions, delirium, or eternal lethargy follow. An icy coldness of the extremities succeeds these symptoms, although

considerable heat may linger around the vital organs, which ~~lingers~~ remains some time after death. At this time livid spots break out over the whole body & the patient reasonless & senseless, neither experiences pain or suffering. Finally death closes the scene.

Heat after death.

So far I have endeavoured to depict this terrible disease, as for the most part it presents itself, although sometimes it exists its force much more energetically, so that it exhibits all the symptoms enumerated above in the course of 24-30 or 40 hours & death leaves the ~~[illegible]~~ corpse covered with a purple colour; a circumstance occurring sometimes before death. On the contrary all the symptoms are sometimes much lighter & milder, persuing longer intervals & more tractable, yet in this state of security a bad management is especially dangerous, perturbing & overspreading with confusion every thing, although this sometimes may happen when the cause is not to be blamed for it. The symptoms of death having been stated, the phenomena appearing in the dead body are now worthy of mention.

Post Mortem Appearances

A little time after death, the colour is much yellower than before; the magnitude of the livid spots & their number are much greater in lean in lips, so that the body appears

as if it had undergone contusion. Very often there is a discharge of blood from the nose, lips, gums, tongue & palate. In the body of a man - 28 years of age who perished of this disease, the following phenomena appeared, others & myself conducting the examination, which as I have often heard, are always present in the bodies of those dying of this disease, when examined. The exterior of the stomach, of the intestines, of the mesentery, of the liver, finally of all the abdominal viscera was of a yellow or bilious colour; livid & broad spots appeared in them; the internal surface of the stomach & intestines appeared greatly inflamed & great heat existed in them & the adjacent parts although the patient might have been dead eight or ten hours. The liver was much inflamed & twice the natural size. When cut with a scalpel it poured out copiously fluid black blood; the concave part was livid and gangrenous; bile existed in the gall bladder, much thickened, black & with difficulty diluted with water; the ductus choledicus was obstructed with bile; the urine in the bladder was thick, black & foetid; many livid spots appeared in the lungs, which in other respects were natural.

So far we have treated of the history of the disease. Now let us proceed to its causes. Causes.

The North Americans assume that this destructive disease comes to them from the American islands, but the inhabitants of these deny that it is indigenous to them. All indeed desire to avoid the opprobrium of destructive a disease. But certainly in all these regions there exist determinate causes which conduce to its production & if in this difference of opinion it is permitted me to prefer my own. I should without hesitation state that it is equally an indigenous disease of America as of other regions where the heat is as intense, yet it is to be conjectured that it prevails more frequently in the islands mentioned than in North America, because in these the temperature of the air is greater & the intermission is not so prolonged.

The proximate cause of this disease appears to be an acrimonious state of the fluids, & the principal of the antecedent, excessive heat of the atmosphere & too much exercise or exertion. Moreover copious exhalations & putrid miasmata, which by heat are sent into the atmosphere from stagnant pools, subterranean bocaches & especially from the immense forests, which in Amer

cia abound in poisonous trees, are to be enumerated as the antecedent causes of this disease. Of these miasmata & putrid exhalations are particularly subtile, ~~between~~ being alone taken into the lungs with the atmosphere, or received into the stomach with the food, they enter the pores of these viscera & of the external skin & commingling with the blood, thereby set up some slow fermentation & affect the fluids with morbid acrimony. Too great indulgence in spirituous liquids in as much as it increases the heat of the body & produces fever, is correctly stated to be one of the antecedent causes of this disease. If the body is exposed to cold night air, especially after hot days, it contributes much to the production of the disease, for cold obstructs the perspiration & cause the more acrid portion of the humours to be retained in the body, which otherwise would be eliminated by the pores of the skin. But "Nothing (says Celsus) happens from a single cause. but that is understood to be the cause, which most appears to have produced it". And also Galen — "Our body being as it were prepared for disease, any external circumstance may produce fever, which circumstance of itself —

would be least likely to produce a violent disease.

The fluids are particularly acid & thin as appears from the history of the disease, — for the blood burst forth from the mouth & nose after death, when no momentum has been given to it; the blood moreover drawn from a vein always appears dissolved, the coagulum being broad, undulating & of little thickness & exhibiting upon its surface livid spots, which are signs of acrimony & tenuity. I recollect to have heard my father mention two cases under his care, in which blood was oozed through the skin of the chest & neck, as if from so many punctures of a lancet, which appear to happen not from momentum but from acrimony. Another case of a youth occurred in whom the sanguineous eruptions produced death in consequence of debility from a long standing intermittent. Another attenuated female, who although at the commencement of the disease attacked with hemorrhage, exhibited at its termination like eruptions. ~~Another~~ Both of these appeared not so much to labour under plethora, so that the blood in the commencement was discharged from the nose & mouth, or at the termination from the skin by its own momentum but from acrimony & tenuity.

Hemorrhagic

We must now discuss the principal ~~preceding~~ antecedent causes. which are great heat & the atmosphere & too much exercise, by which accumulation of the fluids as ~~an antecedent~~ a proximate cause is induced. 1st. By heat & motion the animal substances become putrid & necessarily acrid. 2d This disease rages most among sailors & other laboring men exposed to the vehement heat of the sun, which in America is great; for on an obscure day in the shade in Charleston the thermometer will stand at 92°. & I have seen it rise to 110° or 112° in the sheet. It is not to be wondered at that so dire a disease should originate from great heat.

Causes

Heat & exercise

Heat 92° & 112°

In the warm regions of America the bodies, especially the face, neck, chest & arms of almost every one are covered with a minute cutaneous eruption, called "Prickly Heat" which begins with light itching and redness & followed with numerous small vesicles filled with lymph. This appears to arise from the acrid fluids ending the delicate arteries between the skin & cuticle, & being poured into beneath the epidermis. This accumulation of the fluids appears to be induced by a hot atmosphere. These eruptions are benignant for by this way nature eliminates these

Prickly Heat

favorable

particles fitted for the production of disease. It is observed that those who have had this eruption are intoxicated by other diseases. — Peculiarities
3d. This disease rages often in the warmest months. 4th The high born & easy in circumstances rarely have it. 5th Cold always depresses it. 6th As the winter approaches this fever becomes milder & by degrees is converted into intermittent. 7th By as much as the temperature is better, the pest is greater in Charleston in the latter end of June 1732 when no air mitigated the roasting heat during the whole day, this fever was so violent acute & deadly that many died on the 2d or 3d day. In the year 1748 the fever broke out in the same place about the middle of August, the first week of which was never more warmer, the mercury F. at 97. 98 & 98 in the shade & this warmth endured a long time with many showers, when it became cooler, it was converted into intermittent.
8th almost all it is impressed that this malady is contagious. All without doubt are obnoxious to this prevailing disease in as much as they are surrounded by the same atmosphere and respire it, from the bodies of the sick continually emanates acrid and some putrid exhalations, with which the air around the sick soon becomes — Non Contagious

filled, which infection the well and sick equally inhale not without great injury. But I have seen very many who daily were in attendance upon those labouring under this disease, protected from the injurious influences of the atmosphere & too much exertion, escape unharmed.

I cannot believe with others that this malady is propagated from one place to another by contagion, unless the atmosphere is susceptible of producing it, In the year 1745, the disease raged in South Carolina to a great extent, when it was clear that contagion from an other province was not the cause of it. For the first case attacked that year was a sailor, who having been drunk for two or three continuous days was seized with this fever & from that time, there being incessant heat for a months, the disease greatly spread in Charleston. And when the greatest heat of the atmosphere is present, there is danger, lest the common fever should be changed into this more severe form, which also I little doubt would happen from inappropriate remedies &

not contagious

bad regimen, indeed this I have seen unless I am mistaken.

In a letter sent me by a Surgeon who was in the fleet of Lord Vernon, this is stated "The force destined for the West Indies embarked at Bristol, it was there attacked by a burning fever altogether resembling this which is esteemed contagious, the care of the ship in which the sick were conveyed was committed to me. I alone in it was unaffected, when we approached the warm regions, the fever ~~appeared~~ took on an other form, viz. Bilious, & first assumed all the symptoms of American Bilious fever, which proved so fatal at Jamaica.

Fever converted into bilious

Formerly it was stated that men were attacked with contagious diseases from fear of them, for Nicholas Massa says "Many from fear alone & ~~particularly fevers~~ imagination were attacked by pestilential fever. This was commonly thought to proceed from the spirits receding inwards to the heart, by which the pores of the body are left ~~without protection~~; this at one time was supposed as a cause of the disease. But it may be better explained by the diminished perspiration, for in the desponding & frightened the perspiration is always diminished, as Sanctorius has shewn from experiment, and when the perspiration is impeded, the putrefacient acid particles are retained in the body & produce fever.

from acrimony of the fluids, we shall now endeavour to prevent the rationale of the symptoms. - This disease often prevails among sailors & men accustomed to labour that among these bodies bound in easy circumstances, because leading an ~~intemperate~~ irregular life, they are more exposed to the causes producing it; moreover they drink great quantities of unhealthy spirits. A medical man who came to the West Indies with Lord Vernon, told me that this disease from too much drinking greatly prevailed among sailors, & was very fatal! this could ~~cannot~~ easily be ~~prevented~~ determined, because from the united ~~opinion~~ testimony of the medical men on board, the ration of spirits being fixed & mixed with three parts of water, & distributed three times daily to each of them, the intensity of the disease immediately decreased. On the contrary, those who drink freely of a generous, acid fluid, in English called Punch, go for the most part unharmed, for by the aid of this drink, the alkalescence of the fluids is corrected or hindered, sweat and urine are promoted, and the acid parts of the

fluids expelled through the pores of the & the Kidneys; the more temperate the life, the less liability is there to the disease.
Why it happens that those who are indige nous & few Negroes are obnoxious to the dis ease I confess I know not unless, that they perspire more than Europeans.
Why Europeans more easily are subjected to this disease than the Indians & those accus tomed to warm regions, is apparent. The benevolent Author of Nature has wisely ordered that the bodies of men & animals should be accommodated to the regions which they inhabit, so that the bodies of those who inhabit warm regions are softer from heat than Europeans, they are more lax & better fitted to perspire co piously, by which operation the alkaler cent particles are expelled.
Acid fluids can produce organic, or powerful movements of the solids, by stim ulating them, thence arises inordinate movement of the fluids, with strong obstruc tion & fever, & at the warm season of the year; by ~~warmth~~ heating fever, & motion of the fluids in any fever, the fluids become more acid & then it is transformed into this disease.
I think that for the most part this hap pens first in the liver, for a sense of opin ion that the fluids of this viscus are

more acid than of other parts, for a great quantity of oily matter from the omentum & mesentery is poured into or ~~from~~ through the adipose ducts or rather veins returning from them, which by heat quickly becomes rancid, because the most bland oil of almonds, in hot weather becomes rancid in the space of a few days, and acquires so great acrimony, so that when swallowed even in small quantity it inflames the fauces. —

Baglivi on Fevers. —

At the commencement of acute fevers avoid purgatives, beware likewise of too volatile & too powerful remedies, for the disease yet being crude, you will carry off what is not to be carried off, or you will augment the fever, or kill your patients.

Before the seventh day in acute & inflammatory affections, neither purge nor give powerful diaphoretics, if there yet be crude peccant matter, ~~and~~ even mixed with healthy fluids. Nor listen to such remedies, except the perceptible signs of coction be apparent.

If there be too great turgescence of the vessels, a determination of blood to the lungs, or other parts, should phrenitis threaten, & the subject be young & the temperament be ardent &c, in continued fevers always let blood at the commencement, & do it before the seventh day. Repeat it according to the urgency of the symptoms. If by this means the vessels are emptied, the mass of blood being rendered less, you pave the way for diaphoretics, for purgatives & other expedites of this kind, demanded by the stage of the disease.

If the least suspicion be presented, of malignant fever, from coagulation, beware of emission of blood as the pest.

I have observed that emetics were more or less

beneficial or hurtful in various regions and climates, we in Rome do not find them as safe in fevers as the more Northern people. In prescribing remedies, therefore, always regard the nature of the climate, & the temperament of the population, nor prescribe any thing which you may learn from books, unless you know well what has been stated.

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Congratulations.

Object in coming before them to take part in clinic.

Reason why I should Pathology incidentally Therapeutics, Pharmacy — will endeavour to make it subservient to the end of practicing.

Physicians not like the lawyers, barbers

Is expected to preside at once.

Must know what he is about. Manner object of clinics.

Give facility in investigating diseases not awkward — how to begin & proceed.

Young physicians have principle & determination but for want of practice cannot make them lead.

First thing to be done is to ascertain the disease how.

Examine organs — How important cases —

Next indications & plan of treatment

Settle [illegible] co-p[illegible]
of astrow.

Then remedies -
Formulae & combinations.
Mode of writing for
Mulad. -

Character of the -
patients who frequent
the clinic.

Unsatisfactory nature
of the treatment
yet satisfactory to the -
purposes - studying.

Case by Robert Nutter –
London Med Gazette –
Vol 1 – 1838-9 – pg – 222
to show the peristaltic movements
of the bowels able to be felt –

Doct Carson

Dr Sir

We cannot get the patients bowels open by injection, and she is now suffering and very weak - please come down this morning

Yr obt

Wednesday

J A D Fulton

Sept 28th 1849 -

Took ten grains of the suspected sulphate of Quinine & dissolved it in 1 oz of water, heated to boiling so as to dissolve all the salts added ammonia in excess & threw down the Quinia, keeping up a moderate temperature a few minutes to drive off the free ammonia. -

a precipitate was thrown down.
The same result occurred from
the iodide of iron.

5. To the ~~iodide~~ citrate precipitation a
small quantity of bile was
added, the ~~solution~~ liquid in a
little while first completely into
reddish colour became more
transparent, with delicate flo-
culose sediment like mucus.
At the bottom of the glass &
upon stirring a few flocs
of more solid matter at the
bottom. The matter collected
from the bottom was shown by
the microscope to consist of
epithelial scales & granular matter
broken up from the coagula-
tion, perfectly clear & transparent
without evidence of precipitation
of the oxide of iron.

a more acidy precipitate remained in the fluid — to which Sulphate of Iron & Potassa & then bile had been added — which was found to consist of amorphous matter, fibrillated brown granular matter =

J. G. Malins

J. J. McAdam

Mrs M. H. C. — Nov 20th 1848 —

Urine light yellow, & depositing a cloudy yellowish sediment.

Took 3ʒ — and heated it when it became clear. Evaporated to ½ — added saturated solution of oxalic acid ½ ʒ — Allowed to stand all night. When a thick yellow gelatinous (amorphous) sediment which on filtering attached itself to the paper, and on drying could with difficulty be separated in the form of a yellow powder. Ammonia applied to paper thus covered causes a beautiful purple colour.

The Mother water left on separating the deposite is beautifully violet coloured on the addition of ammonia & lets fall a purple deposite. Evaporated to dryness deposits crystals of oxalate of lime in quantity.

The urine placed in tubes produced a violet tint on the addition of ammonia & carbonate of potassa, & lets fall delicate flocculose sediments.

Liebig on Meat.

SCIENCE FOR THE KITCHEN.

It is the great and distinguishing excellence of modern science to have a practical, utilitarian character, very different from the ancient science, which preferred the remotest abstractions of philosophy, and shrunk with contempt from the economic relations of life. Modern sages study in mines and factories, in the shop of the mechanic and the field of the farmer; esteeming it their highest glory to improve the useful processes of art; and we find that Baron Von Liebig, one of the most renowned of living chemists, writing to President Everett, of Harvard University, (perhaps the republicanism of the correspondent suggested the simplicity of the subject) boasts his descent into the kitchen, and is willing to accept the honor of proposing some scientific improvements in the art of roasting and boiling, or of expounding philosophic principles, the merits of which can be best judged by those who are most jealous of unlawful intrusions into the sacred penetralia down stairs. We find the Baron's letter in the July number of Silliman's Journal; and as we take it for granted that it was written for the common benefit of American cooks and housewives, we hope to do them a service, and him an honor, by giving circulation to what is most practical in his philanthropic labors.

"I have long intended," says he to President Everett, "to write in acknowledgement of your friendly letter; but I desired, by way of return, to incorporate in reply the results of an investigation, which has been brought to a conclusion only within the last few days. It is a chemical investigation of muscle-flesh; in which I have been led to some interesting results. The fluid in the meat of recently slaughtered animals," he continued,—"the flesh-fluid—is *sour*, and contains two free acids, whose nature, up to this time, has been but imperfectly known. I have found that one of the acids is an *organic acid*, and is the same that appears in the process of the souring of milk. The other acid is phosphoric acid. Both acids are but partially free. A part is united to potash, magnesia and lime. They have been recognized in all muscle-flesh thus far examined, as well of carnivorous as of herbivorous animals." He then mentions the existence and properties of two animal principles,—*creatine* and a substance "analogous to *chinin*, or perhaps *codeir*,"—with two nitrogenous acids, and a variety of other bodies, which exist in flesh, and which he describes in a separate paper "now in press;" but which would be of little interest to ordinary readers. We confine ourselves to the practical results.

"If you leach (that is, wash) fine chopped meat with cold water," he says, "you procure a red fluid and a white residue. The latter is "the actual muscular fibre," which is of itself perfectly insipid, and imparts no taste or nutritive property to boiling water. By boiling, indeed, it "becomes hard and altogether unpalatable." All the ingredients of flesh that have odor or taste may be abstracted with cold water. Among them is "a considerable quantity of albumen, which may be separated as coagulum, by heating the fluid to boiling."

"It follows from the above," says Liebig, "that one can make for himself, in a few minutes, the best and strongest broth. If for example, a pound of finely chopped beef with a pound (or pint) of *cold* water, be carefully mixed and then slowly heated to boiling, and the fluid separated from the solid parts by pressing through a clean cloth; this broth, with the usual condiments (boiled onions, vegetables, salt, &c.,) added, will furnish a dish beyond the criticism of the most fastidious gourmand. Longer boiling will *not* necessarily make the extract stronger.

"If the broth be slowly evaporated over a water-bath," (that is, if the stew pan be placed in a vessel of boiling water, instead of over a naked fire,) "it will become brown, and assume a fine taste like *broiled* meat. If evaporated (by exceedingly gentle heat) to dryness, it yields a brown mass, of which, upon a journey, for example, half an ounce would convert a pound of water into the strongest broth."

Such extracts, differently flavored, would furnish the basis for innumerable rich gravies and sauces.

"By boiling a piece of meat in the water, a separation of the solution from the insoluble ingredients takes place. The soluble ingredients go into the extract—the broth—the soup." And meat thus boiled, "loses its nutriment, when eaten without the juices—the extract."

"The method of *roasting* is obviously the best to make flesh most nutritious." But it does not follow that boiling is to be interdicted. "If a piece of meat be put in *cold* water, and this heated to boiling, and boiled till it is 'done,' it will become harder and have less taste, than if the same piece had been thrown into water already boiling. In the first case the matters grateful to the smell and taste, go into the extract—the soup; in the second, the albumen of the meat coagulates from the surface inward, and envelopes the interior with a layer which is impermeable to water. In the latter case, the soup will be indifferent, but the meat delicious."

It may be inferred that the nutritive qualities of meat are not enhanced by pickling. "The brine which forms in the salting of meat, contains all the ingredients of the flesh-fluid." "The salted meat becomes partly reduced by this process to a mere supporter of respiration"—or, as sailors call it, into "old junk," the qualities of which, as compared with fresh meat are well understood.